

SCIENCE

FRIDAY, AUGUST 5, 1887.

IT IS GREATLY to be regretted that the National Educational Association, at its recent meeting, gave its indorsement to the so-called Blair bill, making provision for national aid to schools in the various States and Territories. This measure has been before the public long enough to obtain thorough discussion; and the opinion of the large majority of intelligent citizens is, that its effect, were it ever enacted into a statute, would be pernicious. The measure has been not unjustly styled a 'bill to promote mendicancy.' It is a bill to impair the self-reliance, and discourage the earnest efforts, of large portions of the community. We have lately taken occasion to call the attention of the readers of *Science* to the alarming increase of paternalism in legislation in the various States. The bill in question is in a direct line with the tendency toward paternalism. We are not among those who assert that the measure is advocated in a demagogic spirit. On the contrary, we believe it to be the outcome of a generous but mistaken intention to do good. We believe the premises on which its supporters base their arguments to be false, as well as that the effects they predict will follow its enactment to be very different from what will actually happen. A resolution indorsing this bill was brought before the teachers at their recent annual meeting, and referred to the appropriate committee. In course of time this resolution appeared, with a number of others, in the committee's report, and was adopted. We are informed that this was done as a mere form, and that the committee's report was adopted without any consideration, merely as a matter of courtesy. If this is so, it is no proper defence. If any teacher objected to that resolution, he should have made himself heard. But the record shows that no objection was made, and that the resolution passed. We repeat that it is very unfortunate that the association took such action. It will greatly lessen public confidence in its representative character.

DURING THE MONTHS in which the tropical tornadoes are most frequent, the pilot chart issued by the Hydrographic Office of the Navy Department will contain reports of experiments in the use of oil to lessen the force of waves during storms at sea. For several years it has been the custom of the office to print monthly on this chart a synopsis of the experience of vessel captains in the use of oil; and the results have in a great many instances been very successful. It has had another effect also. It has stimulated inventors to prepare devices for carrying the oil over the bows of vessels, and has induced a number of dealers in oleaginous fluids to prepare a special brand of oil for this purpose. The receptacle for the oil which seems to be the most useful yet offered to navigators is the design of a Swede. It is said that the British Channel fleet, while cruising in the vicinity of Copenhagen, were supplied with these funnel-shaped bags for distributing oil in storms. The authorities at the American Navy Department have not yet admitted the value of the experiments. A Chicago concern has succeeded in perfecting a combination of mineral and vegetable oils, which is said to be very effective for the purpose, and the Hydrographic Office is advised that it is being extensively carried by steamers on the Lakes during the present season. Thus far there have been very few reports of the effect of experiments on the inland lakes. A new apparatus has been described in the *Yacht*. It consists of a vertical cylinder with numerous small openings, which, by an automatic process, lets the oil flow out as soon as the bow of the ship to which the apparatus is fastened plunges into the water.

THE MONTANA INDUSTRIAL SCHOOL FOR INDIANS.

IN connection with the present movement to introduce manual training as a factor in the common-school education, it is valuable to make note of the testimony to its educational effectiveness derived from experiments in other fields. Its introduction into the colored schools of the South has been followed by most beneficial results, and we now learn of its success among the Indian tribes.

The American Unitarian Association is one of the religious bodies of the country which, since 1874, has had charge of the education of the Indians. This association has nominally been in charge of the Utes. The attempt to establish an industrial school for the Utes failed, however, because of the frequent removal of the tribe, its opposition to all forms of civilization, and the lack of sufficient government support. Mr. Henry F. Bond, the representative of the association, then turned his attention to the Crow reservation in Montana.

The Crow tribe, which numbers about thirty-five hundred, of whom about eight hundred are children of school age, have never had any settled missionary or educational work done among them, except a small government school at the agency. The tribe had been originally assigned to the Methodists; but no work has been done by them, though they, as well as the Catholics, have recently secured mission-sites on the reservation, which will soon be occupied.

The Crows have always been the firm friends and allies of the whites. They have resisted all overtures from other tribes to join them in hostilities, and have always been ready to take up arms against any tribe, even their own friends, who made war on the whites. It is perhaps for this very reason that they have been for so long neglected by missionary bodies, whose efforts have been directed to the Christianization and civilization of those tribes from whom most danger was to be apprehended. As a natural result of this neglect, the Crows are among the least civilized of all the tribes. They cling to their wild ways of life, and are reluctant to settle down to habits of industry. They are sensual and immoral in their practices. But the universal testimony of the twelve agents who have been appointed to the Crows, in the last eighteen years, is that they are docile, good-tempered, and not inclined to intemperance, as are most other tribes, and that they are faithfully endeavoring to adapt themselves to their changed condition. They have agreed to take up allotments, and to build houses on their homesteads, and cultivate the ground. The government has sent out farmers with their families to settle among them, and to instruct them in agriculture and the ways of civilized life; and the agents invariably speak well of their readiness to avail themselves of the facilities thus afforded. Nowhere would there seem to be greater need of missionary and educational work, and Mr. Bond decided that here was the best field of labor. His decision was approved, as were also the location selected and his plans for the erection of an industrial boarding-school building to accommodate from thirty to fifty pupils. The site chosen was on the Big Horn River, on the mail-stage route from Custer Station on the Northern Pacific Railroad, distant seven miles, to Fort Custer thirty, and the Crow agency, on the Custer battle-ground, forty, miles distant.

The commissioner of Indian affairs also approved the location, and promised a contract for Indian pupils. The government will pay \$108 annually for each Indian pupil taught and supported at the school. The annual cost of maintaining the school, with the full complement of fifty pupils, will be from \$8,000 to \$10,000, of which sum the government's payments will constitute one-half.

The building is substantial and commodious, made of hewn cottonwood logs, on a stone foundation, having eighty-six feet frontage, with wings running seventy feet to the rear, forming three sides of a hollow square. The gambrel roof gives a second story

for the dormitories, thus saving present expense for schoolrooms, which are placed in the lower story.

At the time of the last report to the association, April 30 of the present year, the school was in operation with eighteen pupils, with a prospect of having the full quota of fifty as soon as its equipment is complete.

Mr. Bond reports the Crow children at the school as docile, affectionate, intelligent, and happy under their new surroundings. They are quick to learn, and interested in their studies and in their occupations. They are to be taught, under the contract with the Indian Bureau, the various industries which will fit them for the duties of civilized life. One of three boys who had run away, and who, as the ringleader, was refused permission to return, offered to submit to punishment if only allowed to come back.

An interesting feature of the work at this school is, that, of the six teachers and officers in charge, three are Indians who have been students at Carlisle and Hampton.

It is intended to add a kitchen, blacksmith-shop, carpenter-shop, and slaughter-house. The slaughter-house is a necessary adjunct of an Indian school, in order that the Indian boys may be taught how to kill animals for food mercifully, and also how to cut them up scientifically instead of hewing and hacking them as they now do.

The curriculum is not yet completely systematized, but probably half the time will be given to industries, and half to the schoolroom exercises. The industrial training will include blacksmithing, carpentry, farming, and butchering for the boys, and house-work, sewing, and cooking for the girls. The outlook for the school seems excellent, and, if the hands of the teachers are upheld by sufficient funds, an excellent work will be accomplished.

THE NEW JERSEY TEACHERS' READING-CIRCLE.

THE results of the first year's work of the New Jersey teachers in the reading-circles call for the highest commendation, and indicate a thorough organization and faithfulness on the part of the members.

The plan of organization, and methods of work, should be known in every State: in fact, the Board of Control in New Jersey is glad to inform other reading-circles of its successes and methods in reciprocity for information kindly sent when their organization was in its incipency.

The committee on constitution sent to all the States in the Union having reading-circles, then numbering thirteen, and received much information which greatly aided them in formulating their report. The result was an organization differing materially in some essential points, and yet containing good ideas from many States. The features that have contributed to its success are the following:—

I. *The Board of Control.*—The election of this board was peculiarly fortunate. It consists of four officers, the State superintendent being president, and one director from each congressional district, thus affording complete representation. The work of the board is intrusted to the following committees: 1. Finance, 2. Course of Reading and Books, 3. Circulars and Printing, 4. Certificates and Diplomas, 5. Local Management. A great part of the success of the circle is due to the last-named committee. Its duties are to supervise the work throughout the State, appoint local managers, instruct them in the work, encourage the formation of local circles and the enrolment of members, hold meetings of managers and members, send speakers to county associations and institutes, and keep up the interest and enthusiasm in the State. Another very important part of the work of this committee, which has contributed very much to the success, is the intimate communication with the local managers in cities and counties, which is carried on by the secretary, Mr. B. C. Gregory of Newark, who has done more work than all the other members of the Board of Control put together. He is an indefatigable worker, an accurate statistician, a skilful organizer and administrator, and an enthusiast on reading-circles, being a Chautauquan, and the secretary also of the Chautauqua Teachers' Reading-Union. This tribute is due to Mr. Gregory, because the New Jersey circle could not have attained such success without him.

The committee on local management divided the State into dis-

tricts, to be supervised by the members of the board. By this means the work was easily pushed and encouraged. Where the best results have been attained, much credit is due to the county superintendents who have co-operated with the committee in spreading information and encouraging the local circles. Where work has been done, it was well done. Unfortunately there are a very few counties where the county superintendents are dead educationally, and the committee have not had time yet to push their work.

Another very important work of this committee has been the district meetings. Soon after the circle was organized, meetings of city and county managers were held in four central places for the purpose of giving instruction and for conference. During the last spring another series of meetings was held in six central places, when all members and friends of education were invited. At each meeting an address was given by some distinguished educator, in addition to the addresses of the chairman and secretary and the reports of local managers. These meetings resulted in much good in unifying the work and cementing the bond of common interest.

The duties of the other committees are essential, but do not come into relation with the organization.

II. *The County and City Boards of Managers.*—The duties and responsibilities of the local managers, city and county, are very important, and the success of the work depends very much upon them; in fact, no success can be looked for except through them. They must enrol members, encourage meetings, and keep the work moving. They must arrange programmes, direct the method of reading, and keep up the enthusiasm.

III. *The Local Circles.*—Experience shows that the work cannot be successfully carried on without meetings and local circles. It is impossible for the majority of teachers to pursue a course of reading alone. They need the inspiration of numbers, a proper comprehension of the matter; and the fullest appreciation of it depends upon discussion, analysis, and amplification. The cities and counties that show the best results have maintained regular meetings.

IV. *The Course of Reading.*—In making the courses of reading, the Board of Control, appreciating the needs of the teachers, provided professional works, embracing the history, principles, and methods of teaching, and reading of a general character, including history and literature. The books are arranged in groups, which enables members to select a purely professional course or one partly professional; but no selection can be made by the omission of a single educational work.

The object of the reading-circle is to induce teachers to continue systematic study in these lines, and it has put into their hands some of the best educational literature available. The course is attractive, entertaining, and inspiring.

The second year's course is now being read, and the third year's course has been arranged. Both provide for professional and general reading. The popularity of the course, and the success of the work, may be seen by the fact, that, out of about 3,250 teachers in the public schools of the State, the secretary reports 1,980 members of the reading-circle. The State superintendent says that its influence is being felt in the remotest districts, and that it has created a greater interest in education than has ever before been known in the State.

C. E. MELENEY.

EXPLORATION AND TRAVEL.

Prejevalsky's Journeys in Central Asia.

UP to the last few years, our knowledge of Central Asia was extremely deficient. Though in the middle ages many travellers crossed the arid highlands of Mongolia and Tibet, among them the famous Marco Polo, though numerous reports on the routes followed by the Chinese silk-caravans exist, the geography of that region was actually unknown. It is only of late years that scientific travellers succeeded in entering Central Asia; and among them Prejevalsky, the Russian general, is most prominent from the extent of his journeys and the valuable results of his expeditions. His most important discovery is that of the mountain-range connecting the Nan Shan system with the western Kwen Luen, which feeds the Khotan and Yarkand Rivers. He proved that the Kwen Luen

forms one enormous system stretching from the Pamir Plateau to western China. Its most northern range is formed by the Taguz Daban, the Altin Tagh, and Nan Shan. It was on his second journey, in 1876, that Prejevalsky explored this region. He advanced from Kulja on the Ili, which he describes as the most lovely district of Central Asia, crossed the Tian Shan, and descended to the oasis of Karashar, on the Bagrash Kul. Here he turned south, and, after having reached the Tarim, followed it until he reached the famous Lob Nor (Lake Lob). He stated the remarkable fact that the western part of this lake, which has no outlet, contains fresh water,—a fact which he verified on his fourth expedition. He concluded that Lob Nor is a reedy lake of no great depth, surrounded by flat shores, the haunt of prodigious numbers of waterfowl, and inhabited by a few hundred human beings, whose habits, tenements, and mode of life, resemble those of the primitive lake-dwellers. The eastern part of the lake must be salt, as it is an inland lake, and all the matter contained and dissolved in the waters of the Tarim is carried into it.

His most important discovery here was that a high chain of mountains, the Altin Tagh, rises almost precipitously from the southern shore of the lake to the limit of perpetual snow. On his fourth expedition he completed these discoveries by that of the high chains of mountains forming the western and southern boundaries of Tsaidam.

He had explored this saline marshy district on his first journey, 1871–73, and thence had visited northern Tibet, with the intention of visiting Lhasa; but when about five hundred miles from this place he was compelled to turn back.

The same region was the goal of his third expedition. Well supplied with funds, he started from Zaisan, in the government of Semipalatinsk. His party numbered thirteen all told, ten being Cosacks. They travelled along the south shore of Lake Urungu, and ascended the Ulyungur. The natives of this river and its chief tributary, the Bolgun, are Targute-Kalmuks, whose kinsmen, inhabiting north-western Dzungaria, are the descendants of those Kalmuks, who, driven out of their camping-grounds by the Dzungars, migrated to the banks of the Volga and Ural, and in 1770 suddenly departed, to the number of four hundred and sixty thousand families, and at last settled on the Ili.

Prejevalsky crossed from the Ulyungur to the eastern continuation of the Tian Shan, and, passing the plain of Barkul, he at last arrived at the oasis of Hami, which he describes as remarkably productive. Corn, vegetables, grapes, and melons are grown there, the last being of such exceptionally fine flavor as to be considered worthy of being sent to the Court of Peking. It is a place of the highest importance, as it commands the chief roads from China to eastern Turkestan and Dzungaria. From here, roads lead to the cities situated along the northern foot of the Tian Shan, and across the desert of Gobi to Sha-chau, on the upper Bulunzir. This oasis is situated at the foot of the Nan Shan, which is here a chain of mountains only twenty-seven miles in width; though farther east, near the Koko Nor, it attains far greater dimensions. Still farther east, in the province of Kansu, the mountains are covered with dense forests; but near Sha-chau it is a sterile, treeless range. Yet the highest parts possess a savage grandeur, with their summits towering above the main axis, their precipices, snow-covered peaks, and glaciers.

The expedition now entered the plateau of Tsaidam,—an expanse of salt marsh and clay flats dotted with lakes, and elevated about ten thousand feet above the sea. The level and desolate character of this country is shown in Fig. 2, which is reproduced from *Le Tour du Monde*.

Another characteristic feature of this region is shown in Fig. 1, which has been taken from the same journal. Around the shrubs and bushes masses of sand and dust are accumulated by the wind, and thus in course of time a small hill is formed, on the top of which a new shrub begins to grow. Von Richthofen's researches show that the masses deposited by the wind are distributed over a wide area in Central and Western Asia, and that the form of the surface of this region is principally due to the action of the wind.

Tsaidam forms the first terrace of the plateau of Tibet. On its northern and southern sides it is enclosed by the branches of the

Kwen Luen, while the spurs of the Nan Shan form its eastern limit. The southern part, which was formerly covered by an extensive salt lake, is extremely level, while the northern section is higher and hilly, and is composed of a barren, sandy ground and saline marshes. The inhabitants of this region are Mongols. Their principal occupation is stock-raising. In summer the herds are driven to the mountains, as the lower parts of the country swarm with insects. On account of the great distance of the agricultural districts of China, and the difficulty of obtaining grain, the inhabitants till the soil to a limited extent. As they are frequently attacked by the Chara Tanguts and the Golyks of the river Mur-usu, they fortify certain parts of their camps and villages, in which they defend themselves from their enemies, whose predatory excursions are said to be permitted and supported by the Chinese governor.

Though the inhabitants of Tsaidam received Prejevalsky well, the native princes, acting doubtless by orders from Peking, refused him both guides and provisions; but at length he succeeded in starting on his way south. After they had passed the Shuga and Baian-kara-ula Mountains, the difficulties of travelling increased greatly. Their guide, who had only once, fifteen years before Prejevalsky's journey, traversed that country on his way to Lhasa, did not

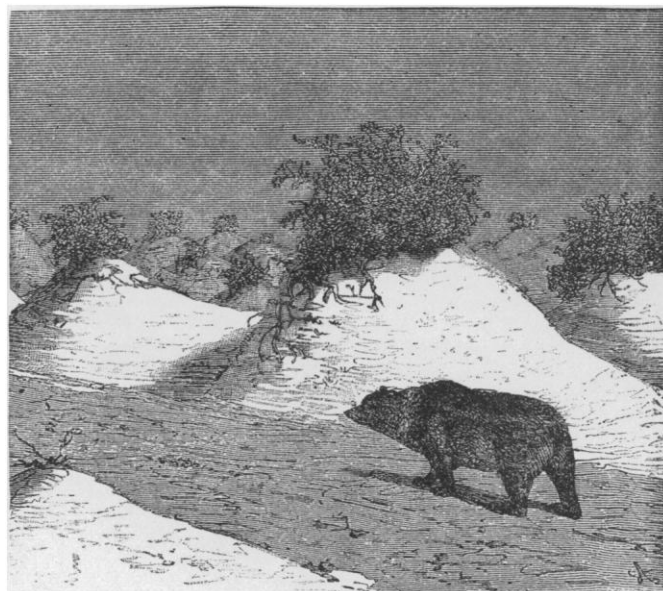


FIG. 1.—SAND-HILLS.

know the way, and the caravan had to select the way according to their own judgment. They succeeded in reaching the Napchitai-ulan-muren, where they found traces of caravan camps, which assured them that they were on the right road. Though it was only the middle of October, the weather turned cold, with continued snowfalls, and their camels and horses could find nothing to eat. Thus, under great difficulties, they succeeded in crossing the Kokoshili and Dumbure Mountains. Having reached the valley of the Mur-usu, they struck the track taken by the Lhasa pilgrims, and ascended the river. But soon the track was lost again; and, after having deposited part of the load in a *cache*, the caravan proceeded southward, and crossed the Tangla Range by a pass which, though 16,700 feet in height, is only 2,100 feet above the valley of the Mur-usu, and has a very gradual slope to the north and south. The eastern continuation of this mountain-range is probably the watershed between the Yang-tse-Kiang and the rivers of Farther India; but we are far from having a sufficient knowledge of the complicated river-systems of this region. It is even still doubtful whether the Nap Chu is the upper course of the Salwen as represented on our map, or of the Irawadi, as some authorities on the geography of Farther India suppose. Prejevalsky now reached the valley of the San Chu; but here his further progress was stopped, as the Dalai-Lama did not permit him to enter his territories. So he was compelled to return, though only one hundred and fifty miles from Lhasa, the goal of his journey.

The results of this journey are confirmed and supplemented by the observations of the Pundit A-K, who visited Lhasa, and, continuing his journey farther north, reached Tsaidam.

In 1884 and 1885 Prejevalsky accomplished his fourth journey in Tibet. From Kiachta he went to the Chinese city of Sining, east of the Koko Nor. Having arrived in eastern Tsaidam, he left all his superfluous baggage under the charge of seven Cossacks, while he and his companions, a party of fourteen, started to explore the sources of the Hoang-Ho, which is situated in a plateau from 14,000 to 15,000 feet in height. Travelling south, Prejevalsky crossed the divide between the Hoang-Ho and Di Chu, the source of the Yangtse-Kiang, at a height of 14,500 feet, and, on entering the basin of the Di Chu, came to a country alpine in its character, but without forests, possessing, however, a rich and varied herbaceous flora. From here he returned to Tsaidam, and, turning west, made the important discovery of the 'Valley of the Winds,' which gradually rises to an easy pass across the Taguz Daban Mountains, leading to Cherchen. This pass, and the route from Sha-chau along the foot of the Altin Tagh, were the caravan routes used in former times in the trade between Turkestan and China. From here he paid

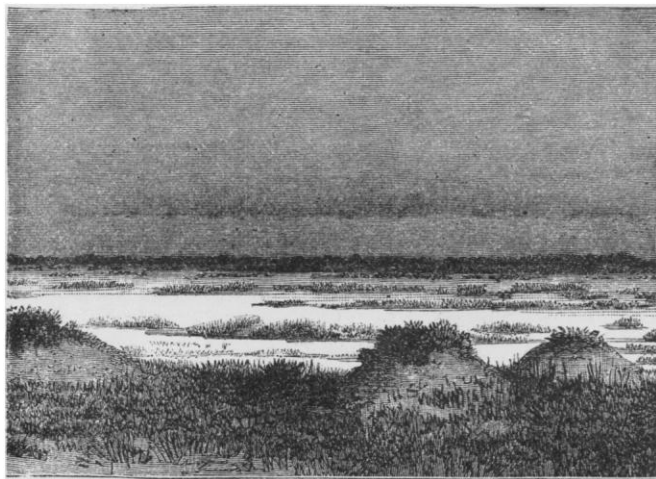


FIG. 2. — SALT MARSHES IN TSAIDAM.

another visit to the Lob Nor, and then returned to Russia by way of Cherchen, Kiria, and Khotan.

Our map shows the important results of these journeys; but besides this, other recent researches have been made use of in constructing the map. The sources of the Irawadi and the adjoining parts show Colonel Woodthorpe's explorations. The north-western part is from the Indian Trigonometrical Survey map of Turkestan, but corrected according to the recent Russian surveys on the Pamir and the adjoining regions, and to the surveys of the Afghanistan Boundary Commission, as far as they have been published.

HEALTH MATTERS.

Health in Schools.

THE Medical Society of the State of New York voted at its annual meeting to distribute fifteen hundred copies of the essay of Dr. A. N. Bell, on the physiological condition and sanitary requirements of school-life and school-houses, which received the Merritt H. Cash prize at the annual meeting held in February. These additional copies are intended for the school-officers of the State, and if read, and the advice therein given is put into practice, much good will result. The essayist opens by calling attention to the plasticity of every living organism during the early period of its existence, and to the liability of causing constitutional weakness, or even a diseased state, if a young person of originally healthy constitution be subjected for a considerable period to such injurious physical conditions as tend to produce a modification of type. All the phenomena of maintaining a living existence are accomplished by the process of nutrition. The parts played by respiration and the blood in this process receive due attention from the essayist; and the

nervous system, including the brain, is concisely described, both as to structure and function.

In speaking of the age at which children should be sent to school, Dr. Bell says children differ greatly in their powers of resistance to injurious influences, as do adults, though incomparably more susceptible to them: hence to fix upon the age at which school-life may be commenced involves the consideration of the kind of school-life as well as the adaptation of the child. The first and central fact to be constantly kept in view in conducting school-life is the plastic property of the child's mind. This fact being always uppermost, healthy children, at the age of about seven years, may safely begin to learn the alphabet, spelling, and figures, on the kindergarten system, giving them not more than two or three hours' application daily, with not less than half of the time, at equal intervals, for play; provided, always, the sanitary conditions of the school-room are duly regarded. At the age of about ten years, systematic education may be commenced; but up to the age of puberty, the school-time should not be more than six hours daily; and no child should be required to devote more than half of the time of school-hours to study, or more than forty minutes at a time to close application; and no recitation or blackboard exercise, which imposes the greatest exertion of the mind, should be longer than fifteen minutes. The education of the senses, and the best kinds of gymnastics for school, are considered quite at length.

There is one point upon which Dr. Bell lays great stress, and we are gratified that he does so; that is, the punishment of a refractory pupil by his detention from play, or keeping him in after school-hours. He says that teachers and others who favor the keeping-in system must be very superficial observers of children, not to have learned that to deprive a child of play is an exceedingly poignant punishment, — one that afflicts and grieves his mind not only, but frequently stirs up his worst passions. Besides, keeping-in is frequently coupled with an extra task, or 'till the lesson is got.' Surely, nothing could be better calculated to create a repugnance to study, and stimulate obstinacy. Moreover, it sometimes involves the loss of a meal, or, at least, a postponement of meal-time, to the derangement of digestion and injury of health. In every attitude of the case the system of keeping-in as a punishment is bad; worse, even than corporal punishment, and, like it, should never be practised except in extreme cases.

In the portion of the essay devoted to the school-house itself, the site first claims attention. In dealing with this subject, the essayist says that the ground air is liable to be impregnated with emanations from all decomposing material; and instances are by no means lacking to show that schools exposed to such dangers have frequently incurred severe epidemics of whooping-cough, measles, scarlet-fever, diphtheria, and typhoid-fever, and are constantly liable to pneumonia, catarrhal and diarrhoeal diseases. In speaking of the materials which should be selected to be used in building school-houses, Dr. Bell refers to the examination of various kinds of stone which was made with reference to the choice of building-stone for the British House of Parliament in 1839. It was then found that the absorption of water for one hundred volumes of rock was in the following proportions: in three specimens of siliceous limestones, 5.3, 8.5, and 10.9; three of nearly pure limestones from oolite, 18.0, 20.6, and 31.0. In all the experiments the air was removed by first placing the specimens in water under the vacuum of an air-pump. Brick, under the same process, will absorb from ten to thirty volumes of water. The ventilation, warming, and sewerage of school-houses are concisely and intelligently discussed.

In speaking of the sanitary surveillance which is so essential in every school-system, Dr. Bell's testimony is of great value. His experience as a member of the Board of Education in Brooklyn entitles him to speak *ex cathedra*. He says, that, constituted as our boards of education are, with few exceptions, though there may be some members who are physicians, it is impracticable to secure competent sanitary supervision under the direction of or subordinate to them. They are generally divided into committees with special charges, — on sites, construction, heating, ventilation, health, etc.; and on school-houses, with the special surveillance of particular schools, severally, to the different committees. All such committees are exceedingly jealous of their rights, and resist the interference of their fellows: hence even inquiries are commonly met

as if reflecting insinuations of shortcomings. It is manifest that no sanitary service under the direction of such a board can be efficient. Sanitary surveillance should therefore be exercised by the health department of every city, town, county, or district, as the case may be, with that special care which the nature of the service demands.

The essay, as we have already said, is one of great value, and we would recommend every teacher in the State to send to the secretary of the Medical Society, William Manlius Smith, M.D., for a copy.

BASE-BALL PLAYERS.—Dr. Leuf contributes an article to the *Medical and Surgical Reporter* on the injuries of base-ball players. The doctor is a player himself, and speaks from personal experience as well as from observation. He says that one of his fingers was injured by a ball five times in one week, and that all his fingers have been injured at least once. His treatment is to continue playing, and at every opportunity—either in the street, in the office, or upon the field—to firmly grasp the finger about the middle, and rub towards the tip. Under this treatment, the swelling, stiffness, and soreness diminish, and after some weeks are entirely gone. The most marked swelling of the hand, accompanied by great pain, can be best relieved by the application of water as hot as can be borne, the hand remaining in the water for an hour, the temperature being maintained during the whole time. Nothing will do so much harm to a player as to abstain altogether from playing because he has some trivial injury or sore muscles.

DIPHTHERIA CARRIED BY THE COOK.—Dr. Jacobi sends the following letter to the health board of New York: “Ann Donnelly is a cook. She was in the house of Lieutenant Reed of West Point. She went to New York to bury a child of hers, who died of diphtheria at the house of a Mrs. McKee, No. 327 West 43d Street, about May 20. About ten or twelve days ago she unpacked a trunk in Lieutenant Reed’s house, in the presence of his children. The boy is recovering from diphtheria: the girl, of five years, died day before yesterday. The cook has disappeared from the house,—trunk and all,—ready to unpack again somewhere else, and go on murdering. If that woman cannot be sent to the State prison for sowing death wherever she goes, can she not be hunted up and stopped from doing mischief?”

TYPES OF BREATHING.—Dr. Mays of Philadelphia has been investigating the reasons for the abdominal or diaphragmatic type of breathing in the male, and the costal type in the female. That there is a fundamental difference in the two sexes was observed by Boerhaave as long ago as 1744. Hutchinson seemed to think that it might be a peculiar reservation against the period of gestation, when the abdomen cannot allow of so free a descent of the diaphragm; and to-day this is regarded as the reason for the difference. It occurred to Dr. Mays that an observation on the respiratory movements of females of a wild race, who had never been subjected to the constriction produced by civilized dress, would assist in solving the problem. With this object in view, he obtained permission to investigate the chest movements of the Indian girls of the Lincoln Institution. The instrument which he employed was a pneumograph of his own device, modelled somewhat after that of Paul Bert. It consists of a pair of calipers with two long and two short arms. The long arms are applied to the chest, and the short arms extend beyond the pinion which binds the instrument together. Between the two short arms, and by means of two small pinions, an air-drum is adjusted in such a way that the slightest motion produces either a rarefaction or a condensation of the air in the drum, which being connected by a column of air with a similar drum carrying a registering-lever, the movements of the chest are accurately marked on a revolving cylinder. In order to produce a slight and uniform pressure on the walls of the chest, the two long arms are connected near their union by a thin piece of elastic rubber. By means of this apparatus Dr. Mays examined the movements of eighty-two chests, and in each case took an abdominal and a costal tracing. The girls were partly pure, and partly mixed with white blood, and their ages ranged between ten and twenty years. There were thirty-three full-blooded Indians. Seventy-five of the entire number showed a decided abdominal type of breathing; three, a costal type; and in three

both types were about even. Those who showed the costal type, or a divergence from the abdominal type, came from the more civilized tribes, like the Mohawks and Chippewas, and were either one-half or three-fourths white; while in no single instance did a full-blooded Indian girl possess this type of breathing. From these observations Dr. Mays concludes, that, so far as the Indian is concerned, the abdominal is the original type of respiration in both male and female, and that the costal type in the civilized female is developed through the constricting influence of dress around the abdomen. It is very evident that the costal type of respiration in the civilized female is not due to the influence of gestation, as was believed by Boerhaave, Haller, and Hutchinson; for the influence of this process obtains as much among the uncivilized as it does among the civilized people. Dr. Mays directs attention to one result of his investigations which is well worthy of consideration. What is the influence of such abdominal constriction, as is practised by our civilized female, on the respiratory functions? he asks. Is it detrimental to health, or is it not? If, as is shown by these experiments, interference with the motion of the diaphragm produces a compensatory breathing in the costal portion of the chest, does not this tend to antagonize or counteract the sluggish respiratory movement of the lung apices? Is there any intimate relation between this induction and the fact that proportionally, and as a rule not without some exceptions, a less number of females than males die of pulmonary consumption?

MENTAL SCIENCE.

Good and Bad Temper.

MR. FRANCIS GALTON, whose researches on the hereditary and other characteristics of mental faculty have introduced science into subjects usually given over to opinion, publishes, in the *Fortnightly Review* for July, an analysis of statistics on good and bad temper. Some time ago Mr. Galton drew up an extensive series of questions concerning the physical and mental traits of families, and offered prizes for the most complete set of answers embracing the record of several generations. Fully recognizing the sources of inaccuracy inherent in such reports, Mr. Galton has ingeniously tested their reliability, and is extremely careful not to treat them in a more accurate manner than they justify. The statistics, embracing descriptions of the tempers of 1,981 persons, are sufficiently extensive to warrant the general conclusions which they suggest.

‘Temper’ is a convenient word wherewith to describe that general complex of emotional traits which serves in common life to distinguish personal characteristics that lead to sociability from those that do not. Every one knows what it means, and, consciously or unconsciously, guides his social intercourse accordingly. It is this that is most tangibly referred to as the source of family feuds and social quarrels. Its variability and fundamental importance make it difficult to describe. It is curious to note that Mr. Galton has only fifteen epithets for good temper, and forty-six for bad.

These are again grouped into five main classes,—mild, docile, fretful, violent, masterful; the three former predominating in women, the two latter in men. The number of persons, however, in the two groups of good and bad temper, is about equal; one set of data making it 48 good to 52 bad, and another 47 to 53. There is likewise little difference between the sexes; but what there is, is in favor of the gentler sex, there being 45 per cent of bad tempers amongst them, and 55 per cent amongst men. Altogether 36 per cent were mild in temper, 15 per cent docile, 29 per cent fretful, 12 per cent violent, and 8 per cent masterful.

It is curious to note how well the number of persons recorded as good, bad, or neutral in temper coincides with what theoretical considerations demand. Of 1,361 persons, 321 are described as good, 342 as bad, and 705 as neutral (most of the last not being described at all); that is, these observers unconsciously divide persons into four equal classes,—good-tempered, bad-tempered, not decidedly either but with more of a tendency to good, and similarly towards the bad. This shows that the line of average temper was placed where it belongs, with equal deviations in either direction. Another mark of reliability is to be found in the fact that near relatives are spoken of as bad-tempered quite as unreservedly as more distant ones.

Whether temper is hereditary is a question not easily answered; but when asked of couples in which both parents are good-tempered, or both parents bad-tempered, the answer is emphatically in the affirmative. 30 per cent of the children of the former are spoken of as good-tempered, and only 10 per cent as bad; while, with regard to the children of the bad-tempered, only 4 per cent are good-tempered, and 52 per cent bad. Similarly, by a method necessarily somewhat arbitrary and not easily described, Mr. Galton concludes that in the ancestry of good-tempered persons, three persons of good temper will occur to two of bad temper, and *vice versa* in the ancestry of a bad-tempered person. Apart from direct heredity, education and circumstances evidently affect temper. A large class of such influences are about as favorable to good as to bad temper, and so tend to produce a variety of tempers. Another class of influences, typically illustrated in the case of a not unusually docile woman becoming very docile as the wife of a masterful husband, tends to divide persons (and this applies particularly to the offspring) into distinct groups; while the effect of a prepotent ancestor may be working to continue one kind of temper through many members of the family. Mr. Galton finds, that, in 14 cases of 49, these domestic and social influences are too weak to overcome the secondary influences in course of heredity, either by the prepotent temper of one member or the general concurrence of temper in several. Finally, it may be noted, that, though so important and readily observed a trait, temper is not a prime consideration in marriage, men of each kind of temper about as frequently choosing a wife of one temper as of another.

This research, though necessarily not very definite, is well calculated to bring out the great variety of this important trait, and to show, amidst this diversity, its tendency to continue its kind.

IS GENIUS UNIVERSAL?—The question, when asked with a due appreciation of the kind of evidence upon which it is to be answered, is by no means an idle one. To know whether the activity for which the world reserves its highest prizes is dependent upon an unusual strength of mental capacity in all directions, or upon the acute specialization of one faculty of mind to the exclusion of any thing like equal development of other faculties, is certainly an important piece of knowledge. Carlyle had no respect for a genius that could not be any kind of genius, and his view is quite generally repeated with approval by persons with less right to an opinion. This is a mistake of all hero-worshippers. They exaggerate the abilities of their hero in all directions in which he had a somewhat more than average gift, and also exaggerate the share due to circumstances in his development. It is easy to cite quite a long list of men eminent in more than one direction; but, as Mr. Sully, whose train of thought (*Gentleman's Magazine*, July, 1887) we are now repeating, well points out, if we are careful to count only such kinds of eminence as imply markedly different modes of mental power, and demand first-rate ability in each, the number of 'double-firsts' is enormously diminished. We find that polynathy has been mistaken for universal genius; that the poet-scientist, for example, was a great poet, but only an average scientist; and that the few eminent names that shine in several departments are decidedly exceptional. "True genius very rarely shows itself in more than one well-defined region of human activity." That this is due to a more or less innate fitness for that kind of activity in which greatness is won, is shown not only by the fact that it is a marked characteristic of genius to show a decided bent that overcomes all obstacles in the direction of future greatness, but also that often tentative excursions in various directions result in failure, until the right activity is found, and success follows. This conception of genius is in harmony with the little we know of its physical substratum. "Universal genius is a biological absurdity," says Mr. Sully. Genius depends upon the abnormal development of a certain group of brain-centres. Widely versatile talent is the outcome of a splendid, generally excellent brain; and perhaps this is the clew to the tendency of genius to go over to abnormal one-sidedness, while talent keeps healthy as an "exalted common sense."

THE editor of *Petermann's Mittheilungen* is in receipt of a letter containing the news that Lupton Bey is safe in Khartum, although still a prisoner of Osman Digma.

BOOK—REVIEWS.

The Pleasures of Life. By Sir JOHN LUBBOCK. London and New York, Macmillan. 16°.

THERE are in every age certain leaders of thought, who, by their successes already won, have gained for themselves the right to speak on topics important to the general culture of the age which they represent. In an age in whose culture science occupies a place exalted far beyond what was ever allotted it before, it is natural to find in the eminent scientist the spokesman of culture. Amongst those entitled to such a distinction, Sir John Lubbock stands amongst the first. The versatility of his talents, the success with which he has utilized them in so many directions, the practical interest he has always taken in the doings of the nation to which he belongs,—all have contributed to his well-merited fame. The author of the 'Origin of Civilization' and of 'Prehistoric Times' does not think it a whit less worthy to minutely record the doings of 'ants, bees, and wasps;' and that, too, in the leisure hours of a busy parliamentary career. In educational and all scientific movements his name has always been prominent. Such a man is naturally often called upon to make short addresses of welcome or of congratulation on the many occasions on which such are customary. These addresses are here collected, and make a very pleasing volume. "Being myself naturally rather prone to suffer from low spirits," says the author, "I have at several of these gatherings taken the opportunity of dwelling on the privileges and blessings we enjoy," etc.

The changed conditions of modern life form the subject of many an essay. That these changes cause a variation in the order and importance of the pleasures of life, goes without saying. This change Sir John Lubbock fully appreciates, and the liveliness of his little book is beyond question. That much of what he says is not new, will be foreseen: such a volume must be judged by lenient standards. If what is said is well and pleasantly said, if it appeals to the good sense of cultured people by the liberality and nobility of the thought, it answers its purpose. It must certainly have been a privilege to have heard these addresses: in the reading of them many will find a 'pleasure of life.'

Under the two titles 'The Duty of Happiness' and 'The Happiness of Duty' is advocated a scientifically justifiable optimism the practical realization of which will be a universal blessing. The importance of literature in the lives of the people at large is represented in 'A Song of Books,' and in the much-disputed 'The Choice of Books.' The social virtues find their praises recorded in 'The Blessings of Friends' and 'The Pleasures of Home.' The practical problems of modern life are touched upon in the essays on the value of time, on science, and on education. The plea for science is a just one: it aims to dispel the notion that science is all drudgery, or all grossly and immediately practical; the scientist a bug-hunter, and nothing more. The culture-worth of science, the educational value of its instructions, are amongst the most precious treasures of our civilization. The office of these in widening the mental horizon, in checking a narrowing dogmatism, in keeping alive a healthy communion with nature, can hardly be exaggerated. In the education of the future, science is destined to play a still more important part than it does now. One may well join the author in the wish for a glimpse of a science-primer of the twentieth century.

Home Sanitation: A Manual for Housekeepers. By the SANITARY SCIENCE CLUB of the Association of Collegiate Alumnae. Boston, Ticknor. 16°.

THE Sanitary Science Club of the Association of Collegiate Alumnae was organized in 1883, for the study of home sanitation. Two years were devoted to general study and research before any attempt was made to extend the work beyond the limits of the club. Since that time the material presented in this little book of eighty pages has gradually taken form. It consists of a series of short essays on the different subjects connected with home sanitation, each of which is followed by a series of questions formulated with reference to the topics discussed, and so framed that an affirmative answer implies a satisfactory arrangement of that part of the home, while, if the answer is negative, a remedy for the defect is suggested. These questions have been practically tested by the

members of the club in their own homes, and by other housekeepers, and have also been adopted as the basis of a course in sanitary science offered by the Society to Encourage Studies at Home. The editors of the manual are Ellen H. Richards and Marion Talbot.

In the introductory chapter the editors call attention to the fact that the hygiene of the home is a subject of growing interest and importance. As one of the problems of social and economic science, it is beginning to receive the attention it may rightly claim. The women of our country are advised not only to follow the discussions which are carried on by sanitary congresses, boards of health, and other authorities, but by combining theory with practice, as few others can, to aid in solving the great questions which seriously affect the interests of the home and the family.

The object of this manual is to arouse the interest of housekeepers in the sanitary condition of their homes; not to alarm or discourage them, but to urge intelligent oversight, and to indicate the points requiring investigation, the methods of examination, and the practical remedies. One of the most dangerous qualities of the unsanitary house is that it does not always and at once produce a definite and virulent disease, such as typhoid-fever or diphtheria, but without doubt it slowly and insidiously causes ill health and general languor, which incapacitate for sustained effort, and to which women are especially subject from their greater confinement to the house.

Householders are reminded that it is not enough to secure right sanitary conditions: these must be maintained. This can best be done through the eternal vigilance of the housekeeper, who can thus, in a large measure, secure the two essentials of a happy home,—good health, and its attendant, good nature. The following motto should be the basis of her efforts: "Any invention intended to be a substitute for watchfulness will prove a delusion and a snare."

The following are the subjects discussed in the succeeding chapters: situation of the house, and care of the cellar; drainage and plumbing; ventilation; heating; lighting; furnishing; clothing; food and drink. The essays themselves are excellent, and the questions on them are very practical and suggestive. The manual also contains a paper read before the Association of Collegiate Alumnae, on sanitary work for women, by Annie E. Allen, in which some excellent advice is given to housekeepers on various subjects; such as their relations to their servants, the dangers connected with boarding-schools, and their duties to themselves.

The concluding paragraph of this paper is as follows: "The day is past when sickness was held to be a direct interference of Providence, as retributive punishment. Pestilence, fevers, and weakness are, indeed, penalties for sin, but it is the sin of ignorance. In this age of scientific enlightenment, and invention, and wide-spread information, ignorance of the primary conditions of health and vigor is unpardonable. A knowledge of sanitary principles should be regarded as an essential part of every woman's education, and obedience to sanitary laws should be ranked, as it was in the Mosaic code, as a religious duty."

We commend this little book to housekeepers, and hope that it will have wide circulation, and prove of as much benefit to those without the membership of the Sanitary Science Club as it evidently has to those upon its rolls.

The New Education. By GEORGE H. PALMER. Boston, Little, Brown, & Co. 16°.

THOSE who are studying the many problems attending the development of our colleges and universities will be grateful to Professor Palmer of Harvard for preserving in permanent form the three articles which make up this book. On the appearance of the first of them in the *Andover Review*, some eighteen or twenty months ago, attention was directed to it as the strongest and fairest plea for the system of free electives in the college course, that had been published. It was immediately subjected to criticism and attack; and in the two other articles which form part of the volume before us, Professor Palmer replied to his critics.

Professor Palmer takes pains to keep one fact, fundamental to the fair discussion of the Harvard system, before his readers; namely, that the particular modes of choice now in use at Harvard are not finalities. They are a stage, merely, in the development,

and it is to be expected that other and better systems will eventually be found, both at Harvard and elsewhere. This consideration has been largely overlooked in the many discussions which have taken place, and omission to give it proper weight has prejudiced the Harvard case very much.

The peculiar strength of Professor Palmer's argument arises from the fact that it rests on a philosophical and ethical basis. It is not an appeal for conformity to a changing environment, although that feature is recognized; nor is it an *ex parte* argument for some preconceived system. It starts from the individuality of the pupil, and demands that his will and character be trained, and that by the exercise of his own free will,—the only character-building that amounts to any thing. Professor Palmer has no difficulty in making out a theoretical case from this standpoint, nor does he find any but cumulative evidence for his system in such facts as he cites from college-history. It must be admitted, too, that he has little trouble in offsetting the objections raised against his ideal plan by most of his critics. He does not allude, however, to Professor West's analysis of President Eliot's report for 1884-85, which many persons regard as the most damaging criticism on the Harvard system that has appeared. We regret this, for Professor West's paper has had a wide influence; and if Professor Palmer could successfully refute its conclusions, he should have done so.

We can heartily agree with the present author in holding that character-building is the main object of education, and that character-building is not mechanical, but organic. It depends, therefore, upon the pupil himself; and habitual wisdom of choice can only be attained through freedom of choice. We agree also in holding that the elective principle has come to stay, and that it will never again be wholly absent from any successful college. But we cannot conclude so rapidly as does Professor Palmer, that unlimited election is the wisest system. It may in time be proved to be so, but we cannot agree that it is proven to be so now. The danger of abuse and the tendency to over-specialization are so great, that we must ask for some provision to be made against them. Moreover, wiser heads than those of eighteen-year old boys know far better than the latter what sorts of knowledge are essential, and what non-essential. We would never urge a return to the old-fashioned inelastic course of study; but we do believe that the group system, modified in certain details, is superior to a system of unlimited election. We believe that under it there is found the freedom of choice which Professor Palmer insists on, as well as the necessary limitations to the abuse of that freedom by untrained minds. We would have it more elastic than it is found at present; we would have a greatly increased number of groups provided, but we would retain its fundamental principle. As the free man must exercise his freedom with due regard to the rights of his fellows, so the freedom of a student's choice must be limited by the teachings of experience. Professor Palmer himself seems to see the force of this position, for he says (p. 105), "Whenever I can hear of a group system, which like the old college has a place for the indistinct young man, and like the new elective college matures him annually by suggesting that he take part in shaping his own career, I will accept the group system." We have confidence that such a system of groups will be forthcoming in due season.

The remarks of the author toward the close of his volume (pp. 142-144, 149, 150, *et ff.*) as to the form of instruction and the character of the studies during the two final years of the college course, are intensely practical, and we trust that they will be heeded. As to methods of collegiate teaching, Professor Palmer says, "Recitations pure and simple have serious drawbacks. They presuppose a text-book, which, while it brings definiteness, brings also narrowness of view. The learner masters a book, not a subject. After-life possesses nothing analogous to the text-book. A struggling man wins what he wants from many books, from his own thoughts, from frequent consultations. Why should not a student be disciplined in the ways he must afterwards employ?" "A pure lecture system is a broad road to ignorance. Students are entertained or bored, but at the end of a month they know little more than at the beginning. . . . Personal sanction is wanted for every step. One who will grow wise must perform processes himself, not sit at ease and behold another's performance."

He again strikes a telling blow at the crude courses of study

in many colleges, when he says (p. 149), "Elementary studies are not maturing studies: they do not make the fibre of a student firm. To studies of a solidifying sort the last years should be devoted. I should like to forbid seniors to take any elementary study whatever, and to forbid juniors all except philosophy, political economy, history, fine arts, Sanscrit, Hebrew, and law. Under such a rule, we should graduate more men who would be first-rate at something; and a man who is first-rate at something is generally pretty good at any thing."

Professor Palmer's forceful thinking is interpreted by a lucid style, which adds greatly to its charm. No one interested in our American colleges can afford to leave the book unread.

N. M. B.

NOTES AND NEWS.

THE 'Bibliography of the Eskimo Language,' by James C. Pilling, is the first of a series of bibliographies of American languages which will be published as bulletins of the Bureau of Ethnology. A few years ago Mr. Pilling published a bibliography of North American languages, of which a limited number of copies were printed. The material has so rapidly increased in the hands of the author as to make a revised edition desirable. We consider the new form of the publication a great improvement, as the division of the material according to linguistic stocks makes the volumes handier. The arrangement of the material is alphabetic, both the names of the authors and the titles of the works being given. Thus the finding of any desired material is made very easy. Particularly valuable are the cross-references given under the heading of 'Greenland,' 'Aleut,' and other localities or tribes, and those under the heading of 'grammar' and 'vocabulary,' as they contain all material on these subjects. Mr. Pilling has comprised in his bibliography, books which contain only occasional remarks on Eskimo dialects in the text, though no connected accounts of the language are given. This made the compilation very difficult, as the material of this kind is scattered over an enormous literature. Notwithstanding this difficulty, Mr. Pilling has succeeded in bringing together an enormous amount of material. We do not think that many works of great importance are omitted, though the number of works containing remarks on Eskimo dialects might be considerably enlarged. We miss the important vocabulary of Rev. Gasté from Chesterfield Inlet, which was published by Petitot. Furthermore, the earliest records of the Eskimo language are older than Pilling states. In the description of the second voyage of Martin Frobisher, which was published in 1577, we find the name of a chief, 'Catchoe,' mentioned. In the 'Second Voyage attempted by Master John Davis, with others, for the Discovery of the North-west Passage, in anno 1586,' which was published in Hakluyt's, 'Principall Navigations,' 1589, a brief vocabulary is given. But these are slight defects which are unavoidable in a bibliography. The work will be indispensable for the student of Arctic ethnology and philology.

— The following is a list of the United States Coast and Geodetic Survey parties in the field, or assigned to field-duty, for the present season: Prof. George Davidson, primary triangulation in southern California, and in charge of work on Pacific coast; C. O. Boutelle, reconnaissance for triangulation to furnish points for State survey, Minnesota; H. L. Whiting, directing work of State survey, Massachusetts, and survey of Vineyard Sound, etc.; A. F. Rodgers, physical hydrography, San Diego Bay, and topography south coast of California; G. A. Fairfield, transcontinental triangulation in Indiana; J. S. Lawson, primary triangulation in California; C. Rockwell, topographical reconnaissance, coast of Oregon; W. H. Dennis, topographical reconnaissance, Long Island Sound; A. T. Mosman, transcontinental triangulation in Ohio; J. W. Donn, topography, District of Columbia; C. H. Boyd, triangulation, coast of Maine; Charles Hosmer, topography, coast of Maine; C. T. Iardella, topography, Long Island; R. E. Halter, in charge Magnetic Observatory, Los Angeles, Cal.; Gershom Bradford, triangulation in Massachusetts, furnishing points for State survey; H. L. Marindin, physical hydrography, New York Bay; William Einebeck, transcontinental triangulation in Utah; F. W. Perkins, reconnaissance for triangulation in Indiana; J. J. Gilbert, triangulation

and topography, Washington Territory; Stehman Forney, topography, southern California; O. H. Tittmann, triangulation, coast of Maine; F. D. Granger, transcontinental triangulation, Kansas; Edwin Smith, telegraphic longitudes, Western States; Eugene Ellicott, topography, coast of Maine; E. F. Dickens, triangulation and topography, coast of Oregon; W. I. Vinal, survey Vineyard Sound, etc.; J. F. Pratt, triangulation and topography, Washington Territory; J. B. Baylor, magnetic work, Northern States; C. H. Sinclair, telegraphic longitudes, Western States; C. H. Van Orden, triangulation, Massachusetts; W. C. Hodgkins, topography, District of Columbia; R. A. Marr, re-survey Vineyard Sound; J. E. McGrath, levelling New York harbor; E. L. Taney, re-survey Vineyard Sound, etc.; J. H. Gray, topography, coast of Maine. Prof. George Davidson is just completing a new edition of the 'Pacific Coast Pilot' (to include the coasts of California, Oregon, and Washington Territory), about eight hundred pages of which have been received at the Coast Survey office, ready for the printer.

— The cable informs us that a letter from Emin Pacha dated Feb. 10, 1887, has been received. It seems that the attitude of King Mwanga towards Emin is far more friendly than some time ago, for Emin says that he hopes to make his retreat from his province by way of Unyoro. If he shall have succeeded in doing so, Stanley will be too late; but it is more probable that Emin, on hearing of Stanley's expedition in Unyoro or Uganda, will stay on the Mvuta Nsige, and await his arrival, or will try to meet him.

— We learn from *The Athenæum* that the government of India have undertaken a topographical survey of the native states of Travancore, Pudukota, and Cochin. The last survey was made seventy years ago. Some of the mountainous tracts of Travancore and Cochin are still absolutely blank, so that there will be much original work to be done.

— Professor Helmholtz, says *The Athenæum*, has been appointed president of the *Kuratorium* of the Physical and Technical Imperial Institute, which is to be opened at Berlin in 1888. Dr. Werner Siemens, who laid the foundation of the institute by his liberal gift, and Dr. Förster, the director of the Berlin Observatory, will also be curators.

LETTERS TO THE EDITOR.

*** The attention of scientific men is called to the advantages of the correspondence columns of SCIENCE for placing promptly on record brief preliminary notices of their investigations. Twenty copies of the number containing his communication will be furnished free to any correspondent on request.*

The editor will be glad to publish any queries consonant with the character of the journal.

Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

Temperance-Teaching.

MY attention has been called to the article on temperance, in *Science* of July 29. As evidence that I have given the subject some thought, I enclose you a copy of questions used last April in the schools of my county, in which no reference is made to stimulants or narcotics. I am inclined to think that constant reference to these subjects may tempt some of that age to a trial, in order to satisfy themselves if the sensation is as represented. General Grant says, "I know from my own experience, that, when I was at West Point, the fact that tobacco in every form was prohibited, and the mere possession of the weed severely punished, made the majority of the cadets, myself included, try to acquire the habit of using it."

JNO. TERHUNE.

Hackensack, N.J., Aug. 1.

Audubon's Grave.

THE Audubon matter stands about thus: the great ornithologist is buried in an old family vault, not in the best order, at the extreme south-west corner of Trinity Cemetery. Only the name 'Audubon' over the door gives any indication.

Some street alterations are to be made ere long, which will cut close to this vault. An offer has been made by the trustees of the cemetery, and accepted by the Audubon family, to remove the remains, and place them in a plot (granted for the purpose) at the head of Audubon Avenue. The movement now proposed is to raise funds among the ornithologists for a worthy monument to mark the spot. The orphan grand-daughters are not able to do

much — perhaps any thing — towards it; nor should they be expected to. It is a matter in which American naturalists surely should be proud and glad to aid. It is intended to bring it before the American Association in some form, next week, and I should be very glad to have a notice in *Science* regarding it.

D. S. MARTIN.

New York, Aug. 1.

Four Large South African Diamonds.

A MODEL of the Victoria, the Great White Diamond, or the Imperial as it has been more recently called, having been sent to this city lately, and nothing having been published in any scientific periodical concerning this stone, it occurred to the writer that some illustrations showing it in its natural, uncut form, as well as after cutting, might be of interest. Concerning its early history very little is known: in fact, where the stone was found is only a matter of conjecture, — a remarkable circumstance when we consider that this is the largest brilliant in the world.

An explanation by a letter in the *London Times* was given, as follows: "that this stone was not found in English dominions at all, but in the neighboring Orange Free State; that it had been found by a boor on his farm, who, knowing it to be a diamond, but fearing being turned out of his farm by a mob, kept the secret a whole year, until a Mr. Allenberg of Porth-Elizabeth saw it, and forwarded it to London."

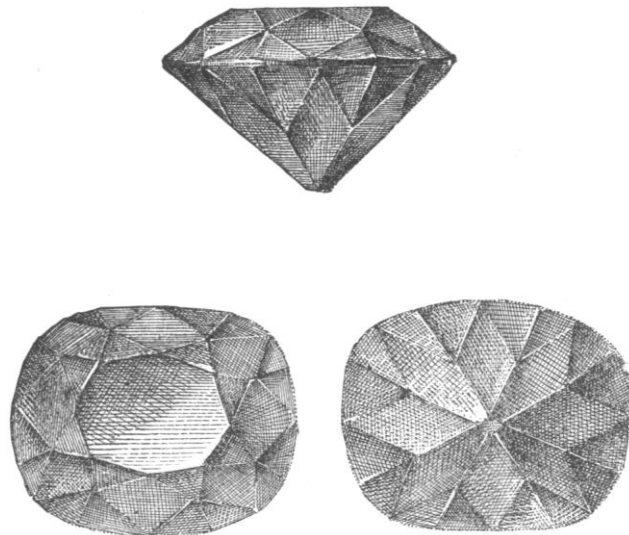
It is, however, believed that it was found by some one in one of the Kimberley mines, South Africa. The first intimation that any of the various mining companies had of its existence was when they heard of its safe arrival in London. It is generally supposed that in the month of June or July, 1884, the stone had been found by one of the surveillance officers of the Central Mining Company in the Kimberley mines. It being his duty to search others, he had the privilege of not being searched himself, and so the stone was passed through the searching-house, and he was afterwards supposed to have found means of communicating with four illicit diamond-buyers. Owing to the stringency of the diamond laws of Griqualand-West, the trading in rough diamonds is forbidden any one not owning one of the 'patents' or 'licenses,' as they are called, costing £200 and a guaranty of £500. All purchases made by them must also be entered in a special registry, and are duly signed every week by the police authorities. £3,000 was the price paid to obtain the stone from the first possessor. To prepare themselves for the ordeal of transporting the stone out of the district, they assembled at night, commenced drinking, then gambling, and after a night's debauch two of the party lost their share in the big stone. The other two reached Cape Town in safety, where the diamond laws are not in force, and from a dealer there received £19,000 cash for their stone. An outward duty of one-half per cent is collected on all shipments of diamonds from Cape Colony; but this diamond is said to have been carried by one of the passengers of a mail steamer, and was hence undeclared. We next hear from it in London, causing considerable sensation at Hatton Garden, the great diamond-market. After considerable time had been spent in trying to find a capitalist who could afford to buy such a gem, it was at last arranged by a former resident of the Cape mines to form a company of eight persons, who bought the stone together for £45,000 cash, on condition that if they should dispose of it each should receive a ninth share in the eventual profits.

Before cutting, it was estimated that the crystal would furnish either of the following gems; if cut as a briallette, 300 carats; as a drop, 230 to 240 carats; as a lozenge, 250 carats; and as a mathematically perfect brilliant, 150 carats. If cut in the latter form, it would have furnished cleavages that would cut into one 40-carat, one 20-carat stone, and 40 carats of smaller stones. It was finally decided to cut it into the largest possible brilliant, still preserving a good shape, and Amsterdam was selected as the place where the gem could best be cut.

It was accordingly sent to the polishing-mills of Jacques Metz, who erected a special workshop for the purpose. In order to better obtain the brilliant form of cutting, a piece was cleaved off which furnished a 19-carat diamond, and was sold to the King of Portugal for £4,000. The cutting of the large stone, which was commenced on the 9th of April, in the presence of the Queen of Hol-

land, took about twelve months, since, instead of being cut by abrasion with another diamond, as diamonds are usually cut, it was polished down on the scaif; and a great amount of time was consumed by the cooling of the stone, as it heated after an hour's running on the wheel. The cutter of the stone was M. B. Barends. The stone in its finished condition weighs 180 carats, and is a beautiful, perfect, steel-blue diamond, and is the largest brilliant in the world.

It is 39.5 mm. ($1\frac{5}{8}$ inches) long, 30 mm. ($1\frac{1}{4}$ inches) wide, and 23 mm. ($\frac{1}{2}$ of an inch) thick, being exceeded in size by one diamond only, the Orloff, belonging to the Russian crown, which weighs 194



FIGS. 1, 2, 3.

carats, but is a large deep rose, and not a brilliant. The Victoria exceeds the Regent in weight by $44\frac{1}{2}$ carats. The Kohinoor weighs only $106\frac{1}{8}$ carats.

The three figures (Figs. 1, 2, 3) give the front, back, and side features of the stone. It will be observed that the form is not entirely even, and that on one side of the girdle there is quite a flat place, a natural unpolished surface, necessary, in cutting, to preserve the large weight of the stone. It is, however, a perfect 58-facet brilliant.

The original weight of the stone was $457\frac{1}{2}$ carats, $3\frac{1}{10}$ ounces



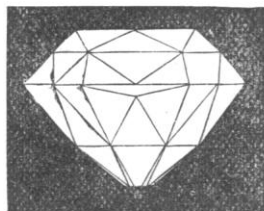
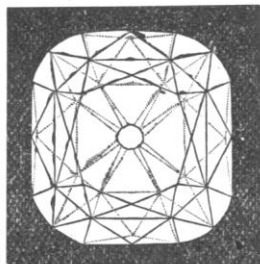
FIG. 4.

Troy. The figure (Fig. 4) is drawn from two photos, that, strange to say, had been taken by a Cape photographer, and fortunately passed through my hands; and the stone to-day is held by a London syndicate for £200,000.

The Tiffany Company large yellow diamond (Figs. 5, 6, 7) weighs 125 $\frac{3}{8}$ carats, is absolutely perfect, is a 'double-deck' cut brilliant, as it is termed, and is undoubtedly the finest large yellow diamond known. It was found in the Kimberley mine about nine years ago, and was cut in Paris. One of the most pleasing features is that it not only retains its rich yellow color by artificial light, but is even more beautiful than by day. It has 40 facets on the crown, 44

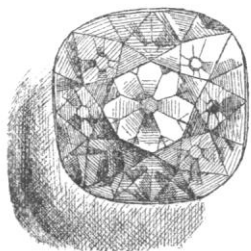
facets on the pavilion or lower side of the stone, and 17 facets on the girdle: total number, 101. Because of its deep color, this is a finer stone than the historical Star of the South (125 carats), which was purchased by the Mahratta, ruler of Baroda, for \$400,000, at the French Exposition, 1867. It also rivals the Florentine, which, according to Schrauf's determination (*Sitzb. d. k. Akad. d. Wissensch.*, Band 54, Abtheil. i. Nov., 1866), weighed 133½ carats, and was sold for 2,000,000 florins, but is only a long double rose or drop, and not a brilliant.

The Tiffany Company No. 2 (see Figs. 8, 9) weighs 77 carats, is

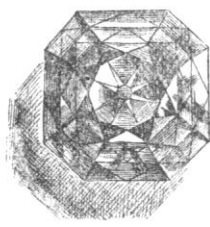


FIGS. 5, 6, 7.

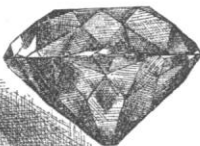
of a light-yellowish color, is absolutely perfect, and is one of the few large stones that have been cut for beauty and not for weight. It is so evenly cut that it will stand on the culet, which is only of the regular size. This stone was exposed to a strong blazing sunlight for thirty minutes, two thermometers registering 110° to 120° F. during the whole time of exposure; and only a very faint, if any, phosphorescence was observed, although the stone was placed in a dark room within thirty seconds after exposure. It had been laid on a black velvet case during the whole time of the experiment,



FIGS. 8, 9.



FIGS. 10, 11.



and nothing came in contact with it while it was being carried to a place of darkness. Its specific gravity is 3.523+ at 60° F.; it measures 26 mm. (1½ inches) in length, 25 mm. (1 inch) in width, and 17 mm. (⅔ of an inch) in thickness; there are 33 facets on the crown or upper side of the stone, and 25 facets on the pavilion or back; and, in addition, there are 55 small facets evenly distributed around the girdle.

Figs. 10 and 11 show a fine yellow diamond, weighing 51½ carats, also from South Africa, and recently recut by Tiffany & Co. in New York City. It is absolutely perfect, and without flaws. It meas-

ures 22 mm. (⅔ of an inch) in length, 22 mm. in width, 23.75 mm. (⅔ of an inch) at the corners, and 15.75 mm. (⅔ of an inch) in thickness; there are 73 facets on the crown or upper side of the stone, and 49 facets on the pavilion or back; and the cutting, which is that of a double-deck brilliant with some of the lower crown-facets divided in two, is quite unique, forming a remarkably beautiful gem.

GEORGE F. KUNZ.

New York, Aug. 1.

Pars Propatagialis musculi cucullaris.

IN a previous number of *Science* (ix. p. 623) Dr. Shufeldt publishes an account of his discovery of "another muscle in birds of taxonomic value,"—a muscle which he thinks unnamed, proposing for it the name '*dermo-tensor patagii*,' and of which he says that "Garrod, even if he knew of its existence, certainly overlooked" it.

This muscle is by no means a new discovery, nor is it in want of names. In the first place, it is Fürbringer's and Gadow's "*pars propatagialis m. cucullaris*." Slightly modified, it is Viallane's "*temporo-alaris*." Gervais and Alix are said to have called this muscle "*tenseur de la membrane axillaire*," and other names might also be quoted. That this muscle has not been "pressed into service with telling effect in taxonomy of the class" is simply due to the fact that Dr. Shufeldt's predecessors found that it did not have the taxonomic value which he seems to attribute to it. He seems to suppose that it is peculiar to the "true passerine birds," by which term I suppose he means the "*Oscines*," since he excludes *Tyrannus* and the "typical *Passeres mesomyodi*."¹ This is not the case, however, as the appended two figures demonstrate, which show that it is typically developed in at least some woodpeckers and parrots.

Dr. Shufeldt, in the paper alluded to, does Garrod great injustice. As I have already pointed out, the muscle is a well-known one, and it is quite unwarrantable to suppose for one moment that Garrod was ignorant of its existence ("even if he knew its existence"). When Garrod wrote his paper on the wing-muscles of birds, he had dissected about one hundred and fifty species of the most different groups of *Passeres* and picarians; and even if he was ignorant of the literature, which of course he was not, he could not possibly have overlooked so conspicuous a muscle. But the fact is, that in the paper in question he treats almost exclusively of the *tensor patagii brevis*, and *t. patagii longus* is only mentioned by the way. The muscular slip which inserts itself on the latter is therefore not at all mentioned, but that does not justify the conclusion that it was overlooked. On the contrary, in the numerous figures which accompany Garrod's paper, it is plainly shown in the only "true passerine bird" (oscinine) figured by him; viz., *Icterus*. And here Dr. Shufeldt grossly misrepresents Garrod. He says, "Garrod chose the wing of *Ramphastos cuvieri* to illustrate the arrangement of the patagial muscles in the *Passeres*, but not a hint of this one is given" (Italics mine).² Of course, Garrod did nothing of the kind: he was too good an ornithologist to believe that *Ramphastos* is one of the *Passeres*. And in point of fact, Garrod expressly states that he presents the figure as representative of a typical picarian bird. That in this case "not a hint" of this muscle is given, should, then, no longer surprise Dr. Shufeldt.

The muscle in question is quite variable, but its true nature as a slip of the deeper portion of *m. cucullaris* (*panniculus carnosus*) may be plainly seen when dissecting such a bird as the English sparrow (*Passer domesticus*). In the free margin of the *parapatagium*, as I call the duplicature of the skin between the neck and the shoulder, which is only a continuation of the *propatagium*, you find a well-developed muscle, which, by means of a tendon at its distal end, inserts itself on the *tensor propatagii longus* at about the middle of the latter. The portion of *m. cucullaris* from which this slip is given off, in its upper extremity corresponds closely with Viallane's *temporo-alaris*, it being easily separated from the skin, and inserts itself on the head above the temporal muscle, while in its entire length it is separated from the dorso-medial line by a considerable space.

¹ See also where he speaks of the "passerine affinities" of *Ampelis* in contradistinction to the "clamatorial ones."

² That this is not a *Japsus calami* is evident both from the line italicized, and from the fact that in the explanation of Fig. 1 *Ramphastos cuvieri* is again referred to as "a passerine bird."

These parts are quite similar in the red-breasted grosbeak (*Habia ludoviciana*); but the upper portion of *cucullaris* is wider, apparently reaching the dorso-medial line, and is not so distinct from the skin. The propatagial slip is quite strong, and blends with the tendon of *t. propatagii longus* farther towards the metacarpus, although not distinct so far as in the swallow figured by Dr. Shufeldt.

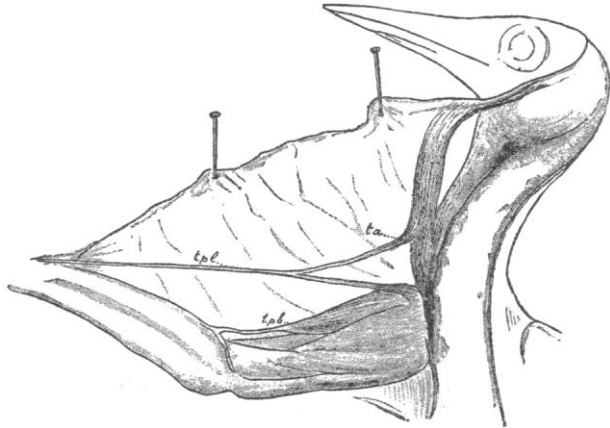


FIG. 1.—DORSAL VIEW OF THE PATAGIAL MUSCLES OF A WOODPECKER, *COLAPTES AURATUS* (DISSECTED AND DRAWN BY THE PRESENT WRITER).

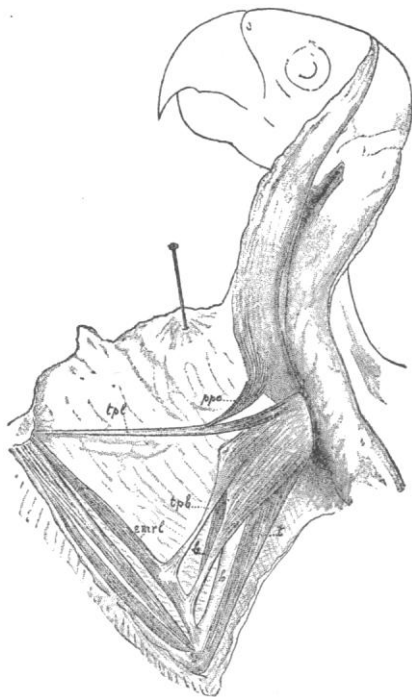


FIG. 2.—CORRESPONDING PARTS OF A PARROT, *AMAZONA LEUCOCEPHALA* (DISSECTED AND DRAWN BY THE PRESENT WRITER).

tpl, tensor propatagii longus; *tpb*, tensor propatagii brevis; *ta*, temporo-alaris, or *ppc*, pars propatagialis m. cucullaris; *b*, biceps; *t*, triceps; *h*, humerus; *emrl*, extensor metacarpi radialis longus. (Both figures one-third natural size.)

From the arrangement as I find it in a young flicker (*Colaptes auratus*), to that of the fully detached temporo-alaris of *Lophorina*, there is but a very short step, as will be seen from the accompanying figure (Fig. 1). The insertion on *t. propatagii longus* is more distal, however, than in *Lophorina*.

On the other hand, the case of *Amazona leucocephala* (Fig. 2) is more like that of *Habia*; but here again there is a difference in regard to the insertion of the tendon, it being more proximal in the parrot, though not so much so as in *Lophorina*.

From Dr. Shufeldt's description, it would seem as if, in the swallows at least, the temporal part of the muscle has become obsolete, — an arrangement corresponding exactly to that which Mr. Viallane found in the cockatoos.

In *Lophorina superba*, as shown by Mr. Viallane, the posterior

end of *cucullaris* is the portion that has become obsolete. The parapatagial slip is here strongly developed, and the junction with *propatagialis longus* takes place rather close to the shoulder.

Dr. Shufeldt claims that this muscle in question is 'wholly absent' in the kingbird (*Tyrannus tyrannus*). In this case, also, I am forced to disagree. Upon dissecting a bird of this kind, I find the propatagial slip of *cucullaris* present, but it does not insert itself on *propatagialis longus*, nor does it develop any tendon at its distal termination. It inserts itself, however, on the skin just where it overlies the fleshy portion of *propatagialis longus*. As in the other birds examined, it follows the free margin of the *parapatagium*.

In a young *Sayornis phæbe* the arrangement is essentially the same, though less distinctly developed, only a few muscular fibres being traceable.

A cuckoo (*Coccyzus erythrophthalmus*) gave a similar result. The whole *m. cucullaris* was exceedingly thin, with the fibres greatly disconnected.

Returning to those species in which the propatagial slip joins the *tensor propatagii longus*, I wish to record the fact, that both in *Passer* and *Habia* I found the propatagial portion of *m. cucullaris* to give off a slight muscular slip to the base of the humeral feather-tract, the feathers of which it probably helps to raise.

This leads to the question as to the function of the propatagial slip. In the first place, it acts as a *tensor parapatagii*. When particularly developed in its proximal portion, as in *Lophorina*, it also raises the elongated neck-feathers, while special development of its tendineal portion aids in strengthening the *tensor propatagii*.

The fact that it occurs similarly developed in so distantly related groups as the parrots, the woodpeckers, and the acromyodian *Passeres* (or *Oscines*) robs it, to a great extent, of its taxonomic value; even were it proven to be present in all the latter, and absent in all the *mesomyodi*, of which we are by no means sure. The example, however, which Dr. Shufeldt adduces to show its importance, is not a very fortunate one; for no ornithologist who knows that *Ampelis*, the waxwing, and the cedar-bird have lamini-plantar tarsus, rudimentary tenth primary, and acromyodian (oscine) syrinx, has had any excuse for suspecting, during the last forty-five years, that its "clamatorial characters" are "predominating in its organization."

Since the above was placed in the hands of the publisher, Dr. Shufeldt has corrected (*Science*, July 29) the mistake in regard to *Rhamphastos* being a passerine bird, — a mistake which he said was caused by circumstances beyond his control. It is a matter of congratulation that he also presents a new drawing of the propatagial muscles of the swallows, in which he corrects the mistake of the former drawing, which represented the swallows as having a *tensor propatagii brevis* with an insertion similar to that of the picarian *Rhamphastos*.

LEONHARD STEJNEGER.

Smithsonian Inst., Washington, D.C., July 22.

Cause of Consumption.

IN the number of your journal for July 8 my respected friend, Dr. Donaldson, has a compact article on the cause of consumption. I agree to every word of it, but would suggest that he has not named one influence which for many years I have held to be a most potent one in New England, and also in Old England, in the development of that terrible disease; viz., residence upon a damp soil. This factor was first proved to be a powerful one in Massachusetts in 1862. Three years subsequently it was proved still more conclusively to exist in England by Dr. Buchanan, medical officer of the Local Government Board of that country. So far as I know, nothing has been done to prove or disprove whether it prevails over the whole world, or only on certain portions of it. I believe, from facts which I have already learned, that it is really a cosmic law. As it is desirable that it should be proved or disproved in this wide sense, I would respectfully suggest it as a subject worthy of the appointment of a world's commission, consisting of an able man from every country that may be represented in the International Medical Congress, which is to be held in Washington this autumn.

My professional experience since the law was first found to be

operative in New England has proved to my own satisfaction that it is vain to attempt to treat consumption while the patient is subjected to this deleterious influence; fatal, indeed, I might call it. My first prescription is to leave the damp locality. Why such a residence tends strongly to the production of consumption—whether as having something, as yet unknown in itself, or that it acts as the nursery of bacilli—I cannot say. But I feel in regard to the above practical rule, as the late Dr. John Ware said to me, that, “with the evidence which has been presented, I feel that I should be criminally in fault in regard to a patient if I did not enforce it.”

If any one wishes for further information, I refer him to Dr. Buchanan's reports to the Local Government Board (1866 and 1867),¹ my addresses before the Massachusetts Medical Society in 1862,² and before the International Congress which met at Washington in 1876.³

HENRY I. BOWDITCH.

Boston, July 23.

Technical Education.

I HAVE to-day received from Sir Henry Roscoe copies of two bills recently introduced into Parliament, through the action, I presume, of the National Association for the Promotion of Technical and Commercial Education, of which the Marquis of Hartington is president, providing for an extension of the technical branches of education in the general scheme. Accompanying these bills is a request for information in regard to what is being done in the United States. I take the liberty of suggesting that such among the readers of *Science* as may have any information of this nature which may be of service to the cause in Great Britain send any documents that may contain it, either directly to Sir Henry Roscoe, at 5 Palace Chambers, Bridge Street, Westminster, S. W., London, or, if preferred, to me. I will see that any thing so sent is forwarded, and should be particularly obliged if duplicates could be at the same time supplied for my own use.

The bills above referred to consist of provisions for the introduction of technical studies and the simpler forms of manual training into day and evening schools, and empower the school boards, local authorities, or managers of public elementary schools, to provide instruction in the use of ordinary tools, in commercial arithmetic, geography, book-keeping, modern languages, and freehand and machine drawing. The powers of the authorities are extended to these schools as in the common schools, defined in the Elementary Education Act of 1870, and they are given leave to apply for grants, and to raise funds, for these technical schools as for the older forms of elementary schools. The term ‘parliamentary grant’ is held to include any grant made by the Science and Art Department. This legislation is prepared and brought into Parliament by Sir Henry Roscoe, Sir Lyon Playfair, Mr. Dixon, Sir John Lubbock, and Sir Richard Temple (50 Vict.).

The evening schools thus provided for are also authorized to provide instruction in the ordinary school studies of the primary grades, and for the girls, sewing, cooking, domestic economy, and hygiene.

R. H. THURSTON.

Ithaca, N. Y., July 23.

Distillery-Swill as a Food for Milch-Cows.

PLEASE send me *Science*, commencing with June 10, containing the first article on distillery report; also your *Swiss Cross*. We are interested in the milk articles now coming out in *Science*.

Some eighteen years ago I owned a dairy, and run on one thousand acres of land eight hundred cows. I had one stable that held 672 cows; it was kept clean, and was well ventilated. For eighteen months I fed distillery-swill. From my experience in feeding swill to milch-cows, I should say that it produces tuberculosis. In ad-

¹ Reports of the Medical Officers of the Privy Council, 1866-67, proving that sub-drained, sewer-district towns have less consumption than others not so sub-drained; or, as Mr. Simon expresses himself, “*dampness of the soil is an important cause of consumption to the population living upon the soil*” [Mr. Simon's Italics].

² Consumption in New England, or Locality One of its Chief Causes: an Address delivered before the Massachusetts Medical Society. By Henry I. Bowditch, M.D. Boston. Ticknor & Field, 1862.

³ Public Hygiene in America; being the Centennial Discourse delivered before the International Medical Congress, Philadelphia, September, 1876. By Henry I. Bowditch, M.D. With extracts from Correspondence from the Various States, together with a Digest of American Sanitary Law, by Henry G. Rehering, Esq. Boston, Little, Brown, & Co.; London, Trubner & Co.; 1877.

dition to swill, I fed grass and hay, and during the summer months ‘soiled.’ At the expiration of eighteen months, I stopped feeding swill; and the number of cows that had to be disposed of because they had consumption was reduced to so few, that I do not now remember that there were any. It is my opinion that if cows are closely confined, and fed on swill and hay exclusively, tuberculosis will develop in nine cows out of every ten inside of a year. The nutritive quality of swill-food depends upon the amount of water put upon the grains after fermentation. I have never had any practical experience in feeding sweet distillery-swill; but if fed in moderate quantities, not too hot and sweet, and with hay and other dry and very nutritious food, I can see no reason why it should be harmful. Parties who produce swill-milk for sale in large cities find swill to be the cheapest food for the production of milk, and consequently use it to excess. I have never seen swill fed sweet in more than one city dairy, and I have been in fifty.

CHARLES CABANNE.

St. Louis, July 25.

Queries.

12. MOSQUITOES.—Is any one able to corroborate the following observation of an old resident of Staten Island? “I have lived on Staten Island twenty years,” said an old gentleman on the Staten Island ferryboat the other evening, “and I have noticed a remarkable thing about the mosquitoes. They always disappear after a storm, and it is invariably just seven days before they return.”

T. J. H.

13. ELECTRICITY AND THE EARTH.—Professor Dolbear, in *Science* for July 29, at p. 60, says, “As for the earth being a reservoir of electricity, every thing that is known about electricity negatives the idea.” On the other hand, at p. 507 of Deschanel's treatise on natural philosophy, translated by J. D. Everett, the statement appears, “On account of its practically inexhaustible capacity for furnishing or absorbing electricity, the earth is often called the *common reservoir*.” Upon the next page of the text-book named, the effect of moisture in the atmosphere upon the insulation of electrical machines is discussed in a manner that is misleading, if Professor Dolbear's statements in regard to the relative conductivity of dry and moist air are rightly understood. Has Deschanel been superseded?

LYONS, N. Y., July 30.

M. A. VEEDER.

Answers.

10. ROBIN'S NEST.—I have in my collection a three-story robin's nest taken from the sill of an unused window of the Watertown High School. I have often seen the old birds in the spring repairing the nest, and have photographed the bird and nest *in situ*.

H. M. HILL.

Watertown High School, N. Y., Aug. 1.

11. LAKE ITASCA.—A recent official bulletin of the Minnesota Historical Society, entitled ‘The Sources of the Mississippi,’ submits the following (p. 24) as one of the “results of their finding:” “That Henry Rowe Schoolcraft, accompanied by Lieut. James Allen, in a scientific expedition made by him, July, 1832, to the head waters of the Mississippi River, did discover, locate, delineate, and map the general basin, which is the first great gathering-place and reservoir of the head waters of that continental stream, and was by him named Lake Itasca, from the Latin words *veritas caput* (‘the true head’).” A more particular account of the occurrence is given, with other historical matter, in, I think, Andreas' or Andrea's large atlas of Minnesota, to which I have not present access. The statement is substantially this: Schoolcraft who was not a classical scholar, having arrived at the lake, asked of one of his party, perhaps Lieutenant Allen, the Latin equivalent for ‘true’ meaning ‘real,’ and was given *veritas*. He then desired the Latin for ‘head,’ and, being told it was *caput*, at once formed the combination Itasca, and applied it as a name to his new-found lake. It thus appears that the term *veritas* may either have been given Schoolcraft through mere inadvertence, or through misconception of his inquiry, as supposing him to wish an equivalent for ‘the true,’ ‘the real,’ in its substantive instead of its adjective form.

FRANC E. BABBITT.

Coldwater, Mich., July 22.